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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,870	02/14/2002	Naoki Okino	219593US3CONT	6350

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

ROSSI, JESSICA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/073,870

Applicant(s)

OKINO ET AL.

Examiner

Jessica L. Rossi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2/14/02. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Group II (claims 7-12) are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the response dated 11/24/03.
2. Applicant's election with traverse of Group I (claims 1-6) in the response dated 11/24/03 is acknowledged. The traversal is on the ground(s) that examination of all claims would not place serious burden on the examiner. This is not found persuasive because, as set forth in the previous office action, the apparatus as claimed can be used to practice another and materially different process such as one for forming a spacer between a variety of substrates other than glass (i.e. opposed metal substrates, opposed plastic substrates) to form a structural panel, which could be found in a variety of classes and subclasses, thereby placing serious burden on the examiner.

The requirement is still deemed proper and therefore is made FINAL.

Drawings

3. Figures 15-17 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

Page 8, line 22: "locating" should be --located--.

Page 9, line 2: "locating" should be --located--.

Appropriate correction is required.

Claim Objections

5. Claim 6 is objected to because of the following informalities: it is suggested to change "locating" to --located-- in lines 26 and 33. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 1-6, it is unclear as to whether Applicants intend (1) for the first and second stages to be made up of a plurality of parts comprising the apparatus or whether Applicants intend (2) for the stages to designate separate process steps during which parts of the apparatus cooperate with the glass sheets. For example, claim 1 (lines 12-14) recites "the first stage having the two glass sheets put thereon...the second stage having the two glass sheets transferred thereon." However, Figure 1 shows the glass sheets being put/transferred onto guide 20/27, which are associated with the first stage S1 and second stage S2, respectively. Applicants are asked to clarify.

If Applicants intend the latter interpretation (2) for the claims, it is suggested to amend the claims so that it is clear the "stages" are not tangible parts of the apparatus upon which the

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glass sheets can be placed. Please note similar language throughout claims 1-6: claim 1, lines 22-24, 31-34; claim 2, lines 14-15; claim 4, lines 3-4; claim 5, lines 4 and 6; claim 6, lines 12-14, 22-23, 25-26, 29-30, 32-33, 44-45.

Also with respect to claim 1 (lines 21-24), it is unclear what Applicants mean by "putting lower edge surfaces of the glass sheets on the first stage on the first guide, and putting lower edge surfaces of the glass sheets on the second stage on the second guide." Do Applicants mean that the first stage is on the first guide and the glass sheets are placed on the first stage? Or, do Applicants mean that the glass sheets are placed on the first guide, which forms part of the first stage? Or, do Applicants mean that the glass sheets are placed on the first guide at the first stage of the process? Please note same questions apply to the second stage and second guide.

Applicants are asked to clarify.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lenhardt (US 4708762) in view of the Admitted Prior Art in the specification of the present application.

With respect to claim 1, Lenhardt is directed to making a double glazing unit (two panes of glass separated by a spacer). The reference teaches supporting two glass sheets 31, 32 so as to maintain a certain gap between them (column 17, lines 15-21), injecting a paste-like material from a nozzle (die) 36 to form a spacer in a peripheral edge between the glass sheets while

relatively moving the glass sheets and die so as to move the die along the peripheral edge between the glass sheets (column 3, lines 37-43; column 14, line 35 – column 15, line 45) with the die injecting the paste-like material in a certain cross-sectional shape (column 5, line 67 – column 6, line 1).

The reference teaches providing the die 36 between a first stage 2a and a second stage 2b (Figure 11; column 10, lines 58-61; column 13, lines 9-12), wherein the first stage has the glass sheets put thereon first before forming the spacer and the second stage has the two glass sheets transferred thereon next (Figures 10-11; column 14, lines 43-48).

The reference teaches providing the first stage with a first guide 4 comprising rollers 7 for guiding the glass sheets in a horizontal direction (Figure 3b; column 10, lines 60-61; column 11, lines 6-10; column 4, lines 5-7) and providing the second stage with a second guide 41 comprising conveyor elements 80, 81 for guiding the glass sheets in a horizontal direction (Figure 4b; column 12, lines 1-9). The reference teaches putting lower edge surfaces of the glass sheets on the first stage on the first guide and putting lower edge surfaces of the glass sheets on the second stage on the second guide (Figures 3b and 4b).

The reference teaches providing the first stage with a first holder comprising auxiliary suction conveyors 70a, 70b in touch with faces of the glass sheets that do not confront each other (Figure 3; column 11, lines 6-30; column 8, lines 4-14) and providing the second stage with a second holder comprising auxiliary conveyors 70a, 70b in touch with faces of the glass sheets that do not confront each other (Figures 4 and 8; column 12, lines 32-40) – note present invention teaches a holder 7 comprising suction devices 17, 18 in touch with faces of the glass sheets that do not confront each other (Figure 1; p. 13, lines 4-5). The reference teaches

maintaining the certain gap before and during formation of the spacer by supporting the glass sheets on the first stage in a substantially vertical fashion by the first holder and supporting the glass sheets on the second stage in a substantially vertical fashion by the second holder (Figures 3-4 and 11-15; column 17, lines 15-21).

The reference teaches carrying out horizontal movement of the relative movement by moving the glass sheets in the horizontal direction between the first stage and second stage and carrying out vertical movement of the relative movement by moving the die in a vertical direction (Figures 11-15; column 14, line 35 – column 15, line 45).

The reference teaches it being *preferred* to slightly incline the glass sheets by a few degrees when moving them in their substantially vertical positions in the horizontal direction (column 4, lines 4-8; column 9, lines 25-26). It appears Applicants are teaching it being known in the prior art to inject resin material into the gap between two glass sheets while the sheets are held in their vertical positions and moved in a horizontal direction parallel to the faces of the sheets (p. 3, line 14 – p. 4, line 3). Since the skilled artisan reading the Lenhardt reference as a whole would have appreciated that a slight inclination of the glass sheets is only *preferred* and therefore does not exclude moving the sheets in their upright positions such that the horizontal direction of movement is parallel to the surfaces of the sheets, it would have been obvious to the skilled artisan at the invention was made to hold the sheets of Lenhardt in a vertical position such that the horizontal direction of movement is parallel to the sheet surfaces, because such is known in the art, as taught by the Admitted Prior Art, and this simplifies the process by eliminating the need to provide equipment capable of inclining the sheets and/or apparatus used to support the sheets.

The reference is silent as to a particular material for the paste-like material used to form the spacer and therefore is silent as to the paste-like material being a resin material. It would have been obvious to the skilled artisan at the time the invention was made to use a resin material for the paste-like material of Lenhardt because it is known in the art to inject resin material into the gap between two glass sheets to form a spacer between the sheets, as taught by the Admitted Prior Art (p. 1, lines 17-25), wherein resin material serves as an excellent sealant.

Regarding claim 2, Lenhardt in view of the Admitted Prior Art teaches the relative movement comprising movement (A) for reciprocating the glass sheets in the horizontal direction parallel to the glass sheet surface between the first stage and second stage (Figures 10-15; column 14, line 35 – column 15, line 45) and movement (B) for moving the die in the vertical direction (column 14, lines 57-64; column 15, lines 32-37). The reference teaches the movement (A) and the movement (B) being alternately carried out twice to form the spacer in horizontal edge portions of the peripheral edge between the glass sheets during movement between the first and second stages and to move the die so as to form the spacer in vertical edge portions of the peripheral edge between the sheets during halts of the sheets on the first stage or second stage, thereby forming the spacer throughout the peripheral edge of the glass sheets (Figures 10-15; column 14, line 35 – column 15, line 45).

Regarding claim 3, Lenhardt teaches, in the following order, positioning a vertical edge portion between the glass sheets close to the second stage along a vertical line of the die by movement (A) (Figure 11; column 14, lines 44-56), halting horizontal movement of the glass sheets (Figure 11), forming the spacer in the vertical edge portion close to the second stage by movement (B) (Figure 11; column 14, lines 57-68), halting movement of the die in the vertical

direction (column 14, line 68 – column 15, line 5), forming the spacer in a horizontal edge portion between the sheets by the movement (A) (Figures 12-13; column 15, lines 7-32), positioning a vertical edge portion between the sheets close to the first stage along the vertical line of the die (Figure 13; column 15, lines 30-32), halting horizontal movement of the sheets (column 15, lines 32-33), forming the spacer in the vertical edge portion close to the first stage by the movement (B) (Figure 13; column 15, lines 32-37), halting movement of the die in the vertical direction (column 15, lines 38-40), and forming the spacer in a horizontal edge portion between the sheets by the movement (A) (Figures 14-15; column 15, lines 40-45).

Regarding claim 4, Lenhardt in view of the Admitted Prior Art teaches the second holder including a suction type pushing and pulling device comprising the suction conveyors 70a, 70b on the second stage 2b (Figure 4; column 12, lines 32-40; column 7, lines 57-64; column 8, lines 4-13). The reference teaches this device sucking and holding the faces of the glass sheets that do not confront each other, wherein the device moves in the horizontal direction parallel to the glass sheet surface to move the glass sheets in the horizontal direction parallel to the glass sheet surface between the first and second stages (column 11, lines 36-41; column 7, lines 57-64).

Regarding claim 5, Lenhardt teaches the suction pushing and pulling device sucking and holding portions of the lower edges of the glass sheets close to the second stage (note position of conveyors 70a, 70b on surface of glass sheets as shown in Figure 4 similar to position of Applicant's device 33 on surface of glass sheets as shown in Figure 1). Lenhardt in view of the Admitted Prior Art teaches the device reciprocating in a region of the second stage to move the sheets in the horizontal direction parallel to the glass sheet surface (Figures 11-15; column 15, lines 6-11).

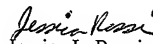
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With respect to claim 6, all the limitations were addressed above with respect to claims 1 and 2, except sucking vertical portions located on the faces of the glass sheets that do not confront each other. Lenhardt teaches the auxiliary suction conveyors 70a and 70b of the first stage sucking vertical portions on the sheet faces close to the second stage (note height of each conveyor extends along vertical portions of the glass sheet faces; Figure 3; column 8, lines 4-13). The reference also teaches the auxiliary conveyors 70a and 70b of the second stage sucking vertical portions on the sheet faces close to the first stage (note height of each conveyor extends along vertical portions of the glass sheet faces; Figure 4; column 8, lines 4-13).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **571-272-1223**. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.


Jessica L. Rossi
Patent Examiner
Art Unit 1733